

Winbond ISD1700 Series

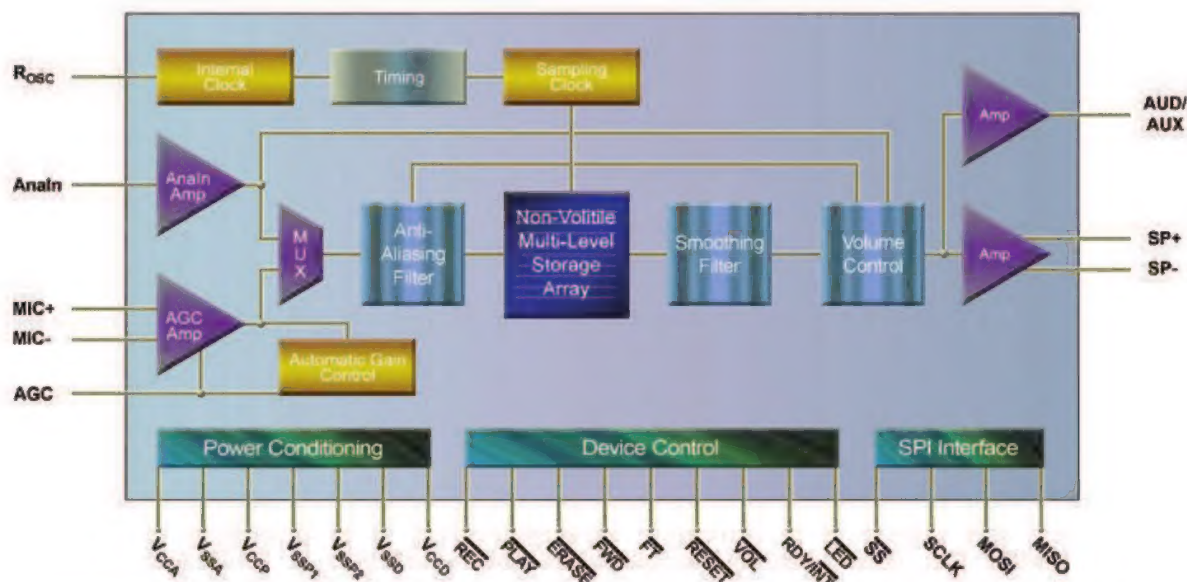
Multi-Message, Single-Chip Voice Record and Playback

The ISD1700 Series is the newest addition to the Winbond® ChipCorder® family and provides several important new features, including voice alert (vAlert), dual operation modes, customizable sound effects, and message management. Additionally, duration is user selectable in a range from 20 to 480 seconds, depending on the part number of the specific device and the selected sampling frequency. The new features make the ISD1700 Series ideal for low-cost single-chip multi-message record and playback applications.

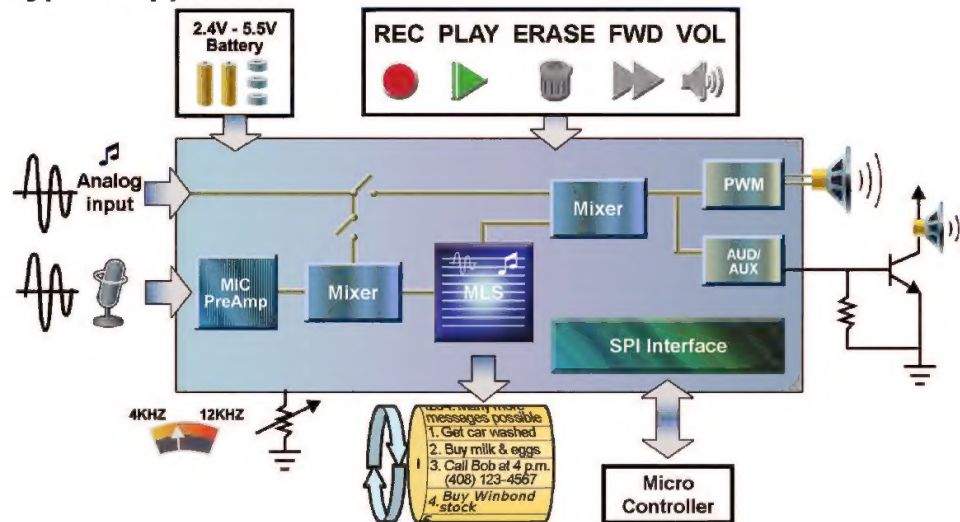
"vAlert" is a new message indicator; its LED port blinks to indicate a new message has been recorded. Because of the integrated trigger and SPI interfaces, ISD1700 Series can operate in standalone or embedded mode. Four customizable sound effects can be used to indicate operation status. Other features include on-chip oscillator (with external resistor), microphone preamplifier, automatic gain control, anti-aliasing filter, Multi-Level Storage (MLS) array, smoothing filter, and speaker amplifier. A basic record and playback subsystem can be implemented with the addition of a microphone, a speaker, passive components, push buttons, and a power source. Recordings are stored in on-chip Flash memory cells to provide zero-power message storage. ISD1700 Series employs Winbond's patented Multi-Level Storage (MLS) technology to store voice and audio signals in memory in their natural form and thereby guarantee high-quality voice reproduction.

Features

- Dual operation modes
 - Standalone Mode: push-button interface
 - Embedded Mode: industrial standard SPI interface
- Integrated message management system
 - **REC**: message recording when held down
 - **PLAY**: individual or sequential playback when triggered
 - **ERASE**: first/last message or global erase when triggered
 - **FWD**: advance to next message and playback when triggered
 - **VOL**: 8 levels output volume control
 - **RDY**: ready or busy status indication
 - **RESET**: bring back to the default state
 - Automatic power-down after each operation
- Message and operation indicators
 - Four customizable audio clip indicators
 - Optional vAlert to indicate new messages
 - LED for visible indications during operation
- Two independent input channels
 - **MIC+/MIC-**: differential microphone inputs with AGC
 - **AnaIn**: single-ended auxiliary analog input for recording or feed-through
- Dual output channels
 - **SP+/SP-**: PWM Class D to directly drive an 8Ω speaker or buzzer
 - **AUD/AUX**: Configurable single-ended current/voltage output to drive external power amplifier
- ChipCorder standard features
 - 4 to 12kHz sampling frequency controlled by external resistor
 - 2.4V to 5.5V operating voltage
 - MLS technology for high-quality, natural voice and audio reproduction
 - 100-year message retention (typical)
 - 100K record cycles (typical)
 - Zero-power message storage eliminates battery backup circuits
- Package options
 - Die form, 28L-TSOP, 28L-SOIC, and 28L-PDIP
- Temperature options
 - Commercial: 0°C to +50°C (die); 0°C to +70°C (packaged devices)
 - Industrial: -40°C to +85°C (packaged devices)



Typical Applications



- Automotive
 - Remote keyless entry, traffic management system, car interior, door chime, radar detector
- Industrial
 - Warning signal, alarm, point-of-sales display, door bells, vending/washing/voting machines, parking meters, bus/metro announcement system
- Consumer & Novelties
 - Voice memo/prompts, key chain, photo frame, photo, album, recording pens, greeting card, and talking toys

Ordering Information

Duration*		Package Options		Lead-Free		Temperature		Options	
30: 30 secs		X: Die		Blank: Lead		Blank: Commercial		Blank: None	
40: 40 secs		E: TSOP		Y: Lead-free		I: Industrial		01: vAlert	
50: 50 secs		S: SOIC/SOP							
60: 60 secs		P: PDIP							
90: 90 secs									
120: 120 secs									
150: 150 secs									
180: 180 secs									
210: 210 secs									
240: 240 secs									

* Based upon 8kHz

Product Selection Guide

Part Number	Sampling Frequency					Die	28L-SOIC	28L-PDIP	28L-TSOP	Availability*
	12 kHz	8 kHz	6.4 kHz	5.3 kHz	4 kHz					
ISD1730	20 secs	30 secs	37 secs	45 secs	60 secs	I1730X	I1730S	I1730P	I1730E	Now
ISD1740	26 secs	40 secs	50 secs	60 secs	80 secs	I1740X	I1740S	I1740P	I1740E	Now
ISD1750	33 secs	50 secs	62 secs	75 secs	100 secs	I1750X	I1750S	I1750P	I1750E	Now
ISD1760	40 secs	60 secs	75 secs	90 secs	120 secs	I1760X	I1760S	I1760P	I1760E	Now
ISD1790	60 secs	90 secs	112 secs	135 secs	180 secs	I1790X	I1790S	I1790P	I1790E	Now
ISD17120	80 secs	120 secs	150 secs	181 secs	240 secs	I17120X	I17120S	I17120P	I17120E	Now
ISD17150	100 secs	150 secs	187 secs	226 secs	300 secs	I17150X	I17150S	I17150P	I17150E	Now
ISD17180	120 secs	180 secs	225 secs	271 secs	360 secs	I17180X	I17180S	I17180P	I17180E	Now
ISD17210	140 secs	210 secs	262 secs	317 secs	420 secs	I17210X	I17210S	I17210P	I17210E	Now
ISD17240	160 secs	240 secs	300 secs	362 secs	480 secs	I17240X	I17240S	I17240P	I17240E	Now

* Availability subject to change without notice. For latest information, please contact your local sales agent. For lead-free package, please contact your local sales agent



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